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SESSION RESUMED IN FILE 'CAPLUS' AT 19:26:53 ON 07 JAN 2011
FILE 'CAPLUS' ENTERED AT 19:26:53 ON 07 JAN 2011
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| FULL ESTIMATED COST | 6.48 | 762.09 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| CA SUBSCRIBER PRICE | -0.87 | -31.32 |

=> s hironao s?/AU
L15 1 HIRONAO S?/AU

=> d l15 ibib

L15 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2011 ACS on STN
ACCESSION NUMBER: 2009:888222 CAPLUS
DOCUMENT NUMBER: 151:252944
TITLE: Dechlorination method of polychlorinated biphenyls at
room temperature under atmosphere pressure
INVENTOR(S): Hironao, Sajiki
PATENT ASSIGNEE(S): Wijin Bionics Co., Ltd., S. Korea; Nagara Bionics Co.,
Ltd.
SOURCE: Repub. Korean Kongkae Taeho Kongbo, 10pp.
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| ----- | --- | ---- | ----- | ----- |
| KR 2009078377 | A | 20090720 | KR 2008-4174 | 20080115 |
| PRIORITY APPLN. INFO.: | | | KR 2008-4174 | 20080115 |

=> d his

(FILE 'HOME' ENTERED AT 17:03:58 ON 07 JAN 2011)

FILE 'REGISTRY' ENTERED AT 17:04:15 ON 07 JAN 2011

L1 STRUCTURE UPLOADED
L2 50 S L1 SAM
L3 STRUCTURE UPLOADED
L4 2 S L3 SAM
L5 55 S L3 FULL
E (PALLADIUM AND CARBON)/CN
E (PALLADIUM AND CHARCOAL)/CN

E (PALLADIUM CHARCOAL)/CN

FILE 'CAPLUS' ENTERED AT 17:22:30 ON 07 JAN 2011

E US20060116535/PN

L6 1 S E3

SEL RN

L7 995744 S E1-E49

FILE 'REGISTRY' ENTERED AT 17:22:56 ON 07 JAN 2011

L8 49 S E1-E49

FILE 'CAPLUS' ENTERED AT 17:23:05 ON 07 JAN 2011

L9 1 S L6 AND L8

FILE 'REGISTRY' ENTERED AT 17:23:47 ON 07 JAN 2011

E 21273-02-9/RN

L10 1 S E3

FILE 'CAPLUS' ENTERED AT 17:26:14 ON 07 JAN 2011

L11 34 S L10

FILE 'CAPLUS' ENTERED AT 18:36:29 ON 07 JAN 2011

L12 148 S L5

FILE 'REGISTRY' ENTERED AT 18:38:34 ON 07 JAN 2011

E 42913-50-8/RN

L13 1 S E3

FILE 'CAPLUS' ENTERED AT 18:38:42 ON 07 JAN 2011

L14 1 S L13

L15 1 S HIRONAO S7/AU

=> d l6 ibib gi abs

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2004:589514 CAPLUS

DOCUMENT NUMBER: 141:139883

TITLE: Method of catalytic deuteration of carbonyl compounds
or secondary alcohols by heavy water

INVENTOR(S): Ito, Nobuhiro; Maesawa, Tsuneaki; Muto, Kazushige;

Hirota, Kosaku; Sajiki, Hironao

PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 42 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|--|----------|-----------------|----------|
| WO 2004060831 | A1 | 20040722 | WO 2003-JP14182 | 20031107 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | |
| RW: | GH, GM, KE, LE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |

| | | | | |
|---|----|----------|------------------|--------------|
| CA 2511885 | A1 | 20040722 | CA 2003-2511885 | 20031107 |
| AU 2003277596 | A1 | 20040729 | AU 2003-277596 | 20031107 |
| EP 1577280 | A1 | 20050921 | EP 2003-814536 | 20031107 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| CN 1732135 | A | 20060208 | CN 2003-80107483 | 20031107 |
| CN 100384792 | C | 20080430 | | |
| JP 4396522 | B2 | 20100113 | JP 2004-564469 | 20031107 |
| US 20060116535 | A1 | 20060601 | US 2005-539188 | 20050616 <-- |
| IN 2005KN01449 | A | 20070720 | IN 2005-KN1449 | 20050726 |
| PRIORITY APPLN. INFO.: | | | JP 2002-378932 | A 20021227 |
| | | | WO 2003-JP14182 | W 20031107 |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 141:139883; MARPAT 141:139883

AB Described is a method of deuterating a carbonyl or secondary alc. compound represented by the general formula R1-X-R2 (I) (wherein R1 = alkyl optionally possessing a CH:CH or C.tplbond.C bond, aralkyl; R2 = alkyl optionally possessing a CH:CH or C.tplbond.C bond, aryl, aralkyl, alkoxy, aryloxy, hydroxy; X carbonyl, hydroxymethylene), which comprises reacting the compound represented by the general formula I with a deuterium source, in particular D2O, in the presence of a catalyst selected among activated palladium, platinum, rhodium, ruthenium, nickel, and cobalt catalysts. By the method, deuteration, which has been conducted under severe conditions, can be conducted under neutral conditions. Even when the compound contains an unsatd. bond, it can be deuterated without reducing the unsatd. bond. Not only hydrogens near the carbonyl or hydroxymethylene group but also those remotely situated from these groups are selectively deuterated without deuterating the carbon-carbon double or triple bonds. Thus, 500 mg tricyclo[5.2.1.0^{2'6}]decan-8-ol and 100 mg Pd-C were suspended in 17 mL D2O, purged with H₂ and heated at 180° for 24 h in an oil bath to give tricyclo[5.2.1.0^{2'6}]decan-8-ol deuterated by 96% at 8-position and 88% at other positions.

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (11 CITINGS)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s sajiki h?/AU
L16 233 SAJIKI H?/AU

=> s l16 and (deuterium or deuterat?)
98597 DEUTERIUM
164 DEUTERIUMS
98668 DEUTERIUM
(DEUTERIUM OR DEUTERIUMS)
42679 DEUTERAT?
L17 44 L16 AND (DEUTERIUM OR DEUTERAT?)

=> d l17 ibib gi abs 1-44

L17 ANSWER 1 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2010:813465 CAPLUS

DOCUMENT NUMBER: 153:311405

TITLE: Method for regio-, chemo- and stereoselective deuterium labeling of sugars based on ruthenium-catalyzed C-H bond activation

AUTHOR(S): Fujiwara, Yuta; Iwata, Hiroki; Sawama, Yoshinari; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Laboratory of Organic Chemistry, Gifu Pharmaceutical University, Gifu, 501-1196, Japan

SOURCE: Chemical Communications (Cambridge, United Kingdom)

(2010), 46(27), 4977-4979
 CODEN: CHCOFS; ISSN: 1359-7345
 Royal Society of Chemistry
 PUBLISHER: Journal
 DOCUMENT TYPE: English
 LANGUAGE: CASREACT 153:311405
 OTHER SOURCE(S):
 AB An efficient and facile deuterium labeling of sugars has been achieved in a completely regio-, chemo- and stereoselective manner using the Ru/C-H₂-D₂O combination via C-H bond activation assisted by the coordination of Ru to the oxygen atom of the sugar-hydroxyl groups.
 REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 2 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2009:1430449 CAPLUS
 DOCUMENT NUMBER: 151:550813
 TITLE: Deuteration of heterocyclic compounds in deuterated solvents using radical reducing agents
 INVENTOR(S): Sajiki, Hironao; Mutsumi, Tomonobu
 PATENT ASSIGNEE(S): Taiho Pharmaceutical Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 11pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 2009269853 | A | 20091119 | JP 2008-121378 | 20080507 |
| PRIORITY APPLN. INFO.: | | | JP 2008-121378 | 20080507 |

AB Heterocyclic compds. are reacted with radical reducing agents in deuterated solvents to substitute radical reaction-active functional group of the compds. with deuterium. Thus, 2',3',5'-tri-O-benzoylcytidine was dissolved in THF-d₈ and treated with azobis(dimethylvaleronitrile) and Bu₃SnH under reflux for 1.5 h to give 42% (5-2H)-2',3',5'-tri-O-benzoylcytidine with degree of deuteration 96%.

L17 ANSWER 3 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2009:1406736 CAPLUS
 DOCUMENT NUMBER: 152:214994
 TITLE: Synthesis of deuterated benzyladenine and its application as a surrogate
 AUTHOR(S): Modutlwa, Nkaelang; Tada, Hiroyuki; Sugahara, Yoshiki; Shiraki, Koichi; Hara, Nobuyuki; Deyashiki, Yoshihiro; Ando, Takayuki; Maegawa, Tomohiro; Monguchi, Yasunari; Sajiki, Hironao
 CORPORATE SOURCE: Laboratory of Organic Chemistry, Department of Organic and Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan
 SOURCE: Nucleic Acids Symposium Series (2009), 53(1), 105-106
 CODEN: NASSCJ; ISSN: 1746-8272
 URL: <http://nass.oxfordjournals.org/cgi/content/abstract/53/1/105>
 PUBLISHER: Oxford University Press
 DOCUMENT TYPE: Journal; (online computer file)
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 152:214994
 AB A symposium. Palladium on carbon-ethylenediamine complex [Pd/C(en)] catalyzed deuteration of N⁶-benzyladenine-d₅, which is a plant

growth regulator, to introduce 5 deuterium atoms, while use of Pd/C as a catalyst led to a complete removal of N6-benzyl group. The corresponding deuterated N6-benzyladenine was successfully used as a surrogate compound for the quant. anal. of residual benzyladenine in crops using LC/MS/MS.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 4 OF 44 CAPLUS COPYRIGHT 2011 ACS ON STN

ACCESSION NUMBER: 2009:1406685 CAPLUS

DOCUMENT NUMBER: 152:239212

TITLE: Alternative I-D exchange reaction on pyrimidine and purine nuclei mediated by tributyltin hydride using THF-d8 as a deuterium source

AUTHOR(S): Mutsumi, Tomonobu; Maruhashi, Kazuo; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Chemical Technology Laboratory, Taiho Pharmaceutical Co., Ltd., 200-22 Motohara, Kamikawa-machi, Kodama-gun, Saitama, 367-0241, Japan

SOURCE: Nucleic Acids Symposium Series (2009), 53(1), 3-4
CODEN: NASSCJ; ISSN: 1746-8272
URL: <http://nass.oxfordjournals.org/cgi/content/abstract/53/1/3>

PUBLISHER: Oxford University Press

DOCUMENT TYPE: Journal; (online computer file)

LANGUAGE: English

OTHER SOURCE(S): CASREACT 152:239212

AB A novel method for the regioselective deuteration of pyrimidine and purine rings mediated by Bu3SnH using THF-d8 as a deuterium source on the basis of a radical reaction was developed.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 5 OF 44 CAPLUS COPYRIGHT 2011 ACS ON STN

ACCESSION NUMBER: 2009:1132449 CAPLUS

DOCUMENT NUMBER: 151:528386

TITLE: Bimetallic palladium-platinum-on-carbon-catalyzed H-D exchange reaction: synergistic effect on multiple deuterium incorporation

AUTHOR(S): Maegawa, Tomohiro; Ito, Nobuhiro; Oono, Keiji; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Laboratory of Organic Chemistry, Department of Organic and Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan

SOURCE: Synthesis (2009), (16), 2674-2678
CODEN: SYNTBF; ISSN: 0039-7881

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 151:528386

AB Several activated carbon-supported bimetallic Pd-Pt catalysts (Pd-Pt/C) were prepared using various reducing reagents, and their catalytic activities were examined for the deuteration of alkyl-substituted aromatic compds. Multiple deuterations catalyzed by Pt-Pd/C proceeded in D2O at 180° under a H2 atmosphere, and a synergistic effect was observed in relation to the incorporation of deuterium at sterically hindered positions on aromatic rings.

REFERENCE COUNT: 65 THERE ARE 65 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 6 OF 44 CAPLUS COPYRIGHT 2011 ACS ON STN

ACCESSION NUMBER: 2009:985184 CAPLUS

TITLE: Multiple/regioselective H-D exchange reaction of aliphatic alkanes and alcohols
 AUTHOR(S): Fujiwara, Yuta; Esaki, Hiroyoshi; Maegawa, Tomohiro; Monguchi, Yasunari; Sajiki, Hironao
 CORPORATE SOURCE: Department of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, N/A, Japan
 SOURCE: Abstracts of Papers, 238th ACS National Meeting, Washington, DC, United States, August 16-20, 2009 (2009), ORGN-309. American Chemical Society: Washington, D. C.
 CODEN: 69LVCL

DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)

AB While a H-D exchange reaction, which is a basic research subject related to the C-H activation, is a powerful tool to prepare deuterium labeled compds., conventional H-D exchange reactions require harsh reaction conditions such as high temperature, high pressure, basic or acidic conditions. Therefore, it is desirable to develop an efficient and facile H-D exchange reaction under mild reaction conditions. We have recently developed the methods, which satisfies such demands, for the Pd/C-catalyzed deuteration of aromatic compds., ketones and alcls. During the course of the investigation, we found that Rh/C is an efficient catalyst for the C-H bond activation-based multiple H-D exchange reactions of non-activated alkanes at 160 °C under an H₂ atmospheric. In this meeting, we will present the detail of the deuteration together with a highly regioselective H-D exchange reaction at the α -position of primary and secondary aliphatic alcls. using a Ru/C-H₂-D₂O combination.

L17 ANSWER 7 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2009:20226 CAPLUS

DOCUMENT NUMBER: 150:120983

TITLE: Method of deuteration using ruthenium catalyst

INVENTOR(S): Sajiki, Hironao; Maegawa, Tomohiro;

Monguchi, Yasunari; Fujiwara, Yuta; Inagaki, Yuya

PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 37pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|--|----------|-----------------|----------|
| WO 2009005069 | A1 | 20090108 | WO 2008-JP61924 | 20080701 |
| W: | AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | |
| RW: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |

PRIORITY APPLN. INFO.: JP 2007-177565 A 20070705

OTHER SOURCE(S): CASREACT 150:120983; MARPAT 150:120983

AB The title method of deuteration is characterized in that a compound having a hydroxyl group, an optionally substituted amino, an ether bond and/or NH moiety is reacted with a deuterium source in the

presence of a ruthenium catalyst and hydrogen gas. Thus, a mixture of 1-decanol and Ru/C (catalyst) in D2O under hydrogen was stirred for 24 h at 80°C to give HO-(CD2)-(CH2)8-Me with 96% deuteration rate.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 8 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:1496215 CAPLUS

DOCUMENT NUMBER: 150:191780

TITLE: Alternative I-D exchange reaction on pyrimidine and purine nuclei mediated by tributyltin hydride using THF-d8 as a deuterium source

AUTHOR(S): Mutsumi, Tomonobu; Maruhashi, Kazuo; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Chemical Technology Laboratory, Taiho Pharmaceutical Co., Ltd., 200-22 Kodama-Gun, Saitama, 367-0241, Japan
Synlett (2008), (18), 2811-2814

SOURCE: CODEN: SYNLES; ISSN: 0936-5214

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 150:191780

AB A method for the regioselective deuteration of pyrimidine and purine rings mediated by Bu3SnH using THF-d8 as a deuterium source on the basis of a radical reaction was developed.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 9 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:1370124 CAPLUS

DOCUMENT NUMBER: 151:77396

TITLE: A convenient and effective method for the regioselective deuteration of alcohols

AUTHOR(S): Maegawa, Tomohiro; Fujiwara, Yuta; Inagaki, Yuya; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Mitahora-higashi, Gifu, 502-8585, Japan
Advanced Synthesis & Catalysis (2008), 350(14+15), 2215-2218

SOURCE: CODEN: ASCAF7; ISSN: 1615-4150

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 151:77396

AB The convenient and regioselective deuteration of hydroxy groups on vicinal carbons was achieved by the combination of 5% ruthenium on carbon (Ru/C), hydrogen gas and deuterium oxide (D2O).

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 10 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:895395 CAPLUS

DOCUMENT NUMBER: 149:378054

TITLE: Mild and efficient H/D exchange of alkanes based on C-H activation catalyzed by rhodium on charcoal

AUTHOR(S): Maegawa, Tomohiro; Fujiwara, Yuta; Inagaki, Yuya; Esaki, Hiroyoshi; Monguchi, Yasunari; Sajiki,

Hironao
 CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, 5-6-1 Mitahora-higashi Gifu, 502-8585, Japan
 SOURCE: Angewandte Chemie, International Edition (2008), 47(29), 5394-5397
 CODEN: ACIEF5; ISSN: 1433-7851
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 149:378054
 AB In the presence of Rh/C in D2O under H2 at 160°C the H/D exchange reaction of unfunctionalized alkanes can easily occur. Inexpensive reagents and mild reaction conditions are used; and fully deuterated products can be obtained after a simple work up procedure.
 OS.CITING REF COUNT: 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (11 CITINGS)
 REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
 L17 ANSWER 11 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2008:672874 CAPLUS
 DOCUMENT NUMBER: 149:9648
 TITLE: Method for deuterating alkanes
 INVENTOR(S): Sajiki, Hironao; Maegawa, Tomohiro; Monguchi, Yasunari
 PATENT ASSIGNEE(S): Nagoya Industrial Science Research Institute, Japan
 SOURCE: PCT Int. Appl., 17pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2008066158 | A1 | 20080605 | WO 2007-JP73184 | 20071130 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |

PRIORITY APPLN. INFO.: JP 2006-325568 A 20061201
 AB Disclosed is a method for deuterating an alkane wherein deuteration effectively proceeds under relatively mild conditions (at low temperature/low pressure). Specifically disclosed is a method for deuterating an alkane wherein an alkane and a heterogeneous platinum group catalyst are added into deuterium oxide and/or a deuterated solvent, and then the thus-obtained suspension is heated in a closed system in a hydrogen gas and/or hydrogen isotope gas atmosphere. For example, 2-methylundecane was treated with 5% Rh/C in D2O under H2 atmosphere to give ≥97% deuterated 2-methylundecane.
 REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 12 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:601246 CAPLUS

DOCUMENT NUMBER: 149:175993

TITLE: H-D exchange reaction taking advantage of the synergistic effect of heterogeneous palladium and platinum mixed catalyst

AUTHOR(S): Ito, Nobuhiro; Watahiki, Tsutomu; Maesawa, Tsuneaki; Maegawa, Tomohiro; Sajiki, Hironao

CORPORATE SOURCE: Chemical Products Research Laboratories, Wako Pure Chemical Industries, Ltd., 1633 Matoba, Kawagoe, 350-1101, Japan

SOURCE: Synthesis (2008), (9), 1467-1478

CODEN: SYNTBF; ISSN: 0039-7881

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 149:175993

AB An effective deuteration method for alkyl-substituted aromatic compds. using a heterogeneous Pd/C and Pt/C mixed catalyst in deuterium oxide in the presence of a small amount of hydrogen gas was developed. Mixing a heterogeneous palladium and platinum catalyst provides an interesting synergistic effect in the H-D exchange reaction and leads to full H-D exchange results even on sterically hindered sites, which indicated only low-deuterium efficiencies when either Pd/C or Pt/C were used independently as a catalyst. The synergistic effect was investigated using a variety of substrates and proved the broad generality of the heterogeneous Pd-Pt-D2O-H2 system in the H-D exchange reaction. Furthermore, this system could be applied to a multigram scale synthesis of useful deuterium-labeled compds., such as deuterium-labeled bis-aniline derivs. as raw materials for polyimides, aryl iodides as synthetic building blocks, and biol. active compds.

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

REFERENCE COUNT: 88 THERE ARE 88 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 13 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:518922 CAPLUS

DOCUMENT NUMBER: 149:79288

TITLE: Facile and convenient method of deuterium gas generation using a Pd/C-catalyzed H2-D2 exchange reaction and its application to synthesis of deuterium-labeled compounds

AUTHOR(S): Kurita, Takanori; Aoki, Fumiyo; Mizumoto, Takuto; Maejima, Toshihide; Esaki, Hiroyoshi; Maegawa, Tomohiro; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Mitahora-higashi 5-6-1, Gifu, 502-8585, Japan

SOURCE: Chemistry--A European Journal (2008), 14(11), 3371-3379

CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 149:79288

AB The Pd/C-catalyzed H2-D2 exchange reaction using a H2-D2O combination provided a general, efficient and environmentally friendly route for the preparation of deuterium gas (D2). H2 sealed in a reaction flask was converted into nearly pure D2, which could be used for the Pd/C-catalyzed

one-pot reductive deuteration of various reducible functionalities and the chemoselective one-pot deuteration of olefin and acetylene. Addnl., a method was established for capturing the generated D₂ in a balloon, which was successfully applied to the Pd/C-catalyzed reductive mono-N-alkylation of a primary amine using nitrile as the alkylating reagent.

OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD
(7 CITINGS)
REFERENCE COUNT: 75 THERE ARE 75 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 14 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:496264 CAPLUS

DOCUMENT NUMBER: 148:517142

TITLE: Efficient and convenient heterogeneous
palladium-catalyzed regioselective deuteration
at the benzylic position

AUTHOR(S): Kurita, Takanori; Hattori, Kazuyuki; Seki, Saori;
Mizumoto, Takuto; Aoki, Fumiyo; Yamada, Yuki; Ikawa,
Kanoko; Maegawa, Tomohiro; Monguchi, Yasunari;
Sajiki, Hironao

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical
University, Mitahora-higashi 5-6-1 Gifu, 502-8585,
Japan

SOURCE: Chemistry--A European Journal (2008), 14(2), 664-673
CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 148:517142

AB The Pd/C-catalyzed efficient and regioselective hydrogen-deuterium
(H-D) exchange reaction on the benzylic site proceeded in D₂O in the
presence of a small amount of H₂ gas. The use of the Pd/C-ethylenediamine
complex [Pd/C(en)] as a catalyst instead of Pd/C led to the efficient
deuterium incorporation into the benzylic site of O-benzyl
protective groups without hydrogenolysis. These H-D exchange reactions
provide a post synthetic and D₂-gas-free deuterium-labeling
method on a wide variety of benzylic sites using D₂O as the
deuterium source and heterogeneous Pd/C or Pd/C(en) as a reusable
heterogeneous palladium catalyst under mild and neutral conditions.

OS.CITING REF COUNT: 15 THERE ARE 15 CAPLUS RECORDS THAT CITE THIS
RECORD (15 CITINGS)

REFERENCE COUNT: 118 THERE ARE 118 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L17 ANSWER 15 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:354069 CAPLUS

DOCUMENT NUMBER: 148:495347

TITLE: Efficient and selective Pt/C-catalyzed H-D exchange
reaction of aromatic rings

AUTHOR(S): Ito, Nobuhiro; Esaki, Hiroyoshi; Maesawa, Tsuneaki;
Imamiya, Eikoh; Maegawa, Tomohiro; Sajiki,
Hironao

CORPORATE SOURCE: Chemical Products Research Laboratories, Wako Pure
Chemical Industries, Ltd., Matoba, Kawagoe, 350-1101,
Japan

SOURCE: Bulletin of the Chemical Society of Japan (2008),
81(2), 278-286

CODEN: BCSJAB; ISSN: 0009-2673

PUBLISHER: Chemical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English
OTHER SOURCE(S): CASREACT 148:495347

AB An effective and applicable deuteration method for aromatic rings using Pt/C-D2O-H2 system was established. Especially, phenol was fully deuterated even at room temperature, and other electron-rich aromatic nuclei were efficiently deuterated under mild conditions. The scope and limitations of the presence method and its application to the synthesis of deuterium-labeled biol. active compds. and deuterium-labeled building blocks for practical multi-gram scale syntheses are reported.

OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 16 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2007:1447986 CAPLUS

DOCUMENT NUMBER: 149:378301

TITLE: An efficient deuteration method catalyzed by heterogeneous platinum group metals

AUTHOR(S): Esaki, Hiroyoshi; Kurita, Takanori; Fujiwara, Yuta; Maegawa, Tomohiro; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Lab. of Medicinal Chemistry, Gifu Pharmaceutical Univ., 5-6-1 Mitahara-higashi, Gifu, 502-8585, Japan

SOURCE: Yuki Gosei Kagaku Kyokaiishi (2007), 65(12), 1179-1190
CODEN: YGKKAE; ISSN: 0037-9980

PUBLISHER: Yuki Gosei Kagaku Kyokai

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A review. The development of effective and versatile deuterium labeling methods has been a topic of sustained interest in a variety of fields such as organic, anal., pharmaceutical, agrochem., material, and environmental chemical. Many precedent deuterium labeling methods usually require high temperature and pressure, strong bases or acids, special apparatus, and/or deuterium atmospheric. The authors report here that they have developed an effective benzylic site-selective H-D exchange reaction using Pd/C as a catalyst in deuterium oxide under hydrogen atmospheric at room temperature. The application of heat to the Pd/C-H2-D2O system accelerated the H-D exchange and led to the effective deuterium incorporation even on the non-benzylic positions. The use of Pt/C in place of Pd/C made an effective deuteration on the benzene ring possible. In addition, aliphatic compds. were deuterated efficiently by using Rh/C instead of Pd/C. The Pd/C(Pt/C, Rh/C)-H2-D2O system was applicable to the deuteration of bioactive mols. such as amino acids, nucleic acids, pharmaceuticals and agrochem. compds. The features of the present method using Pd/C(Pt/C, Rh/C)-H2-D2O system are reliability, simplicity, and efficiency.

L17 ANSWER 17 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2007:998499 CAPLUS

DOCUMENT NUMBER: 147:344303

TITLE: Process for deuteration of benzyl position in O-benzyl groups

INVENTOR(S): Sajiki, Hironao; Maegawa, Tomohiro; Kurita, Takanori

PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
SOURCE: PCT Int. Appl., 28pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|--|-----------------|----------|
| WO 2007100080 | A1 | 20070907 | WO 2007-JP54010 | 20070302 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM EP 1992605 A1 20081119 EP 2007-737658 20070302 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR US 20090036659 A1 20090205 US 2008-281576 20080903 PRIORITY APPLN. INFO.: JP 2006-58201 A 20060303 WO 2007-JP54010 W 20070302 | | | | |
| ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT | | | | |
| OTHER SOURCE(S): MARPAT 147:344303 | | | | |
| AB This invention pertains to a method for deuteration of benzyl position in O-benzyl groups with a deuterium source in the presence of a palladium-carbon ethylenediamine complex and hydrogen. For example, benzyl protecting group in various saccharides were deuterated in high yields by this method. | | | | |
| REFERENCE COUNT: | 5 | THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT | | |
| L17 ANSWER 18 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN | | | | |
| ACCESSION NUMBER: | 2007:581168 | CAPLUS | | |
| DOCUMENT NUMBER: | 147:95200 | | | |
| TITLE: | Efficient H/D exchange reactions of alkyl-substituted benzene derivatives by means of the Pd/C-H ₂ -D ₂ O system | | | |
| AUTHOR(S): | Esaki, Hiroyoshi; Aoki, Fumiyo; Umemura, Miho; Kato, Masatsugu; Maegawa, Tomohiro; Monguchi, Yasunari; Sajiki, Hironao | | | |
| CORPORATE SOURCE: | Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Mitahora-higashi 5-6-1 Gifu, 502-8585, Japan | | | |
| SOURCE: | Chemistry--A European Journal (2007), 13(14), 4052-4063 CODEN: CEUJED; ISSN: 0947-6539 | | | |
| PUBLISHER: | Wiley-VCH Verlag GmbH & Co. KGaA | | | |
| DOCUMENT TYPE: | Journal | | | |
| LANGUAGE: | English | | | |
| OTHER SOURCE(S): | CASREACT 147:95200 | | | |
| AB A method for efficient and extensive H/D exchange of substituted benzene derivs. which is catalyzed by heterogeneous Pd/C in D ₂ O as a deuterium source under hydrogen atmospheric is described. Multideuterium incorporation into unactivated linear or branched alkyl chains that bear a carboxyl, hydroxyl, ether, ester, or amide moiety and are connected with a benzene ring was achieved by using the Pd/C-H ₂ -D ₂ O system. The present method does not require expensive deuterium gas or any special equipment. | | | | |
| OS.CITING REF COUNT: | 17 | THERE ARE 17 CAPLUS RECORDS THAT CITE THIS RECORD (17 CITINGS) | | |
| REFERENCE COUNT: | 155 | THERE ARE 155 CITED REFERENCES AVAILABLE FOR | | |

THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L17 ANSWER 19 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2007:296849 CAPLUS

TITLE: Novel redox reactions between sec-alcohols and ketones
using Pd/C-H₂O-D₂O

AUTHOR(S): Esaki, Hiroyoshi; Ohtaki, Rumi; Maegawa, Tomohiro;
Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Department of Medicinal Chemistry, Gifu Pharmaceutical
University, Gifu, 502-8585, Japan

SOURCE: Abstracts of Papers, 233rd ACS National Meeting,
Chicago, IL, United States, March 25-29, 2007 (2007),
ORGN-825. American Chemical Society: Washington, D.
C.

CODEN: 69JAUJ

DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)

LANGUAGE: English

AB Oxidation of sec-alcs. and reduction of ketones are both important chemical
transportations. We have recently reported that the efficient
Pd/C-catalyzed H-D exchange of aromatic derivs. readily proceeded in D₂O
under hydrogen atmospheric During the course of our further study to explore

the scope of the H-D exchange reaction, we have found the use of either
non-aromatic sec-alcs. or ketones leads to a formation of a mixture of
deuterium-labeled sec-alcs. and ketones. The result indicated
that ketones formed from sec-alcs. without oxidants under the
hydrogenation conditions and the hydrogenation of aliphatic ketones to the
corresponding sec-alcs. simultaneously proceeded. We present the novel
redox system between sec-alcs. and ketones using Pd/C-H₂-D₂O in association
with the deuterium-efficiency.

L17 ANSWER 20 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2007:199776 CAPLUS

DOCUMENT NUMBER: 146:421550

TITLE: Mechanistic study of a Pd/C-catalyzed reduction of
aryl sulfonates using the Mg-MeOH-NH₄OAc system

AUTHOR(S): Mori, Akinori; Mizusaki, Tomoteru; Ikawa, Takashi;
Maegawa, Tomohiro; Monguchi, Yasunari; Sajiki,
Hironao

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical
University, Mitahora-higashi 5-6-1, Gifu, 8585, Japan

SOURCE: Chemistry--A European Journal (2007), 13(5), 1432-1441
CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:421550

AB A method for the deoxygenation of phenolic hydroxy groups via aryl
triflates or mesylates has been established by using a combination of
Pd/C-Mg-MeOH. The addition of NH₄OAc to the system markedly accelerated the
reaction rate and expanded the scope of the reaction. Mechanistic studies
suggested that a single-electron transfer process from the Pd⁰ center to
the benzene ring is involved in the reduction of aryl sulfonates and that
NH₄OAc works as a solubilization reagent of the Mg salt and as an
accelerator of the electron transfer, thus enhancing the reaction process.
Our method was also applicable to the regioselective deuteration
of benzene derivs. with CH₃OD as the solvent and deuterium
source: the original hydroxy group could be efficiently replaced with a
deuterium atom.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 21 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2007:192322 CAPLUS

DOCUMENT NUMBER: 146:421549

TITLE: Novel Pd/C-Catalyzed Redox Reactions between Aliphatic Secondary Alcohols and Ketones under Hydrogenation Conditions: Application to H-D Exchange Reaction and the Mechanistic Study

AUTHOR(S): Esaki, Hiroyoshi; Ohtaki, Rumi; Maegawa, Tomohiro; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan

SOURCE: Journal of Organic Chemistry (2007), 72(6), 2143-2150
CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:421549

AB A liquid-phase redox system between secondary alcs. and ketones is described. Deuteration of either secondary alcs. or ketones using the Pd/C-H₂-D₂O system gave a mixture of deuterium-labeled secondary alcs. and ketones. The results indicated that the secondary alc. was oxidized to the corresponding ketone without oxidants under the hydrogenation conditions and the hydrogenation of the aliphatic ketone to the corresponding secondary alc. simultaneously proceeded. Detailed mechanistic studies on the redox system as well as the H-D exchange reaction are discussed.

OS.CITING REF COUNT: 16 THERE ARE 16 CAPLUS RECORDS THAT CITE THIS RECORD (16 CITINGS)

REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 22 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2006:1087188 CAPLUS

DOCUMENT NUMBER: 146:81743

TITLE: General method of obtaining deuterium-labeled heterocyclic compounds using neutral D₂O with heterogeneous Pd/C

AUTHOR(S): Esaki, Hiroyoshi; Ito, Nobuhiro; Sakai, Shino; Maegawa, Tomohiro; Monguchi, Yasunari; Sajiki, Hironao

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, 5-6-1 Mitahora-higashi, Gifu, 502-8585, Japan

SOURCE: Tetrahedron (2006), 62(47), 10954-10961

CODEN: TETRAB; ISSN: 0040-4020

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:81743

AB A protocol of a versatile H-D exchange reaction of heterocyclic compds. catalyzed by heterogeneous Pd/C in D₂O is described. The reaction of various nitrogen-containing heterocycles with 10% Pd/C (10 wt% of the substrate) under hydrogen atmospheric in D₂O as a deuterium source at 110-180°C for 24 h afforded the deuterated compds. with satisfactory efficiency of deuteration in moderate to excellent isolated yields. Furthermore, the Pd/C-H₂-D₂O system can be extended to the direct deuteration of biol. active compds. such as sulfamethazine, which is used as a synthetic antibacterial drug for fat stocks and would be applied as a general method for the preparation of the standard

materials for the anal. of residual chems. in foods and so on.
 OS.CITING REF COUNT: 25 THERE ARE 25 CAPLUS RECORDS THAT CITE THIS
 RECORD (25 CITINGS)
 REFERENCE COUNT: 79 THERE ARE 79 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 23 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2006:862829 CAPLUS
 TITLE: Pd/C(en)-catalyzed benzylic site selective H-D
 exchange reaction of O-benzyl protective group
 AUTHOR(S): Kurita, Takanori; Maegawa, Tomohiro; Monguchi,
 Yasunari; Sajiki, Hironao
 CORPORATE SOURCE: Department of Medicinal Chemistry, Gifu Pharmaceutical
 University, Gifu, 502-8585, Japan
 SOURCE: Abstracts of Papers, 232nd ACS National Meeting, San
 Francisco, CA, United States, Sept. 10-14, 2006 (2006)
 , ORGN-689. American Chemical Society: Washington, D.
 C.
 CODEN: 69IHRD
 DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)
 LANGUAGE: English
 AB O-Benzyl group is one of the most common hydroxyl protective groups and
 deprotected easily by the catalytic hydrogenation using Pd/C.
 Deuterium labeled compds. at the benzylic position of O-benzyl
 groups are widely applicable. In particular, simplification of a 1H NMR
 chart is valuable in the field of sugar chemical. However, benzyl bromide or
 chloride- α,α -d₂ as a synthon of deuterium-labeled
 O-benzyl ethers is quite expensive. We recently have published
 regioselective H-D exchange reaction on a benzylic carbon using
 Pd/C-D₂O-H₂ system while it is not applicable to substrates bearing
 reducible functionalities such as O-benzyl groups and so on. By the way,
 we also reported the chemoselective hydrogenation method with retention of
 the O-benzyl protective group using Pd/C-ethylenediamine complex
 [Pd/C(en)] as a catalyst. Hence, we began to develop benzylic site
 selective H-D exchange reaction of the O-benzyl protective group using
 Pd/C(en)-D₂O-H₂ system. The present method is easily applicable to
 synthesis of various O-benzyl protected compds. bearing deuterated
 benzylic site in excellent deuterium efficiencies and chemical
 yields.

L17 ANSWER 24 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2006:768374 CAPLUS
 DOCUMENT NUMBER: 145:219618
 TITLE: Method for producing deuterium gas and
 catalytic deuteration method using
 deuterium gas obtained thereby
 INVENTOR(S): Hirota, Kosaku; Sajiki, Hironao; Ito,
 Nobuhiro
 PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 34pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|----------|
| WO 2006080202 | A1 | 20060803 | WO 2006-JP300446 | 20060116 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DU, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, | | | | |

KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

| | | | | |
|---|----|----------|------------------|------------|
| CA 2596233 | A1 | 20060803 | CA 2006-2596233 | 20060116 |
| EP 1882672 | A1 | 20080130 | EP 2006-711727 | 20060116 |
| R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| CN 101111454 | A | 20080123 | CN 2006-80003426 | 20070727 |
| KR 2007112138 | A | 20071122 | KR 2007-7018973 | 20070820 |
| US 20080145303 | A1 | 20080619 | US 2007-883193 | 20070830 |
| PRIORITY APPLN. INFO.: | | | JP 2005-21754 | A 20050128 |
| | | | WO 2006-JP300446 | W 20060116 |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention provides (1) a method for producing deuterium gas characterized by bringing a deuterated solvent into contact with H gas under pressure in the coexistence of a catalyst selected from a Pd catalyst, a Pt catalyst, a Ni catalyst, a Co catalyst, an Ir catalyst, and a Rh catalyst, and a Ru catalyst in which a ligand is not coordinated; and (2) a catalytic deuteration method of a compound with a reductive functional group characterized by bringing deuterium gas obtained in the (1) into contact with the compound with a reductive functional group in the coexistence of a catalytic reduction catalyst.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 25 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2006:689620 CAPLUS

DOCUMENT NUMBER: 146:421688

TITLE: Synergistic effect of a palladium-on-carbon/platinum-on-carbon mixed catalyst in hydrogen/deuterium exchange reactions of alkyl-substituted aromatic compounds

AUTHOR(S): Ito, Nobuhiro; Watahiki, Tsutomu; Maesawa, Tsuneaki; Maegawa, Tomohiro; Sajiki, Hironao

CORPORATE SOURCE: Chemical Products Research Laboratories, Wako Pure Chemical Industries, Ltd., 1633 Matoba, Kawagoe, 350-1101, Japan

SOURCE: Advanced Synthesis & Catalysis (2006), 348(9), 1025-1028

PUBLISHER: CODEN: ASCAF7; ISSN: 1615-4150

DOCUMENT TYPE: Wiley-VCH Verlag GmbH & Co. KGaA

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:421688

AB A synergistic effect in the H-D exchange reaction of alkyl-substituted aromatic compds. using the Pd/C-Pt/C-D2O-H2 system was discovered. This system would lead to fully H-D exchange results even on the sterically hindered sites which were only low-deuterium incorporated by Pd/C or Pt/C independently. Since the reaction was general for a variety of aromatic compds., it could be applied to the deuteration of dianiline derivs. as raw materials for polyimides.

OS.CITING REF COUNT: 20 THERE ARE 20 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 26 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2006:206614 CAPLUS
 DOCUMENT NUMBER: 144:330812
 TITLE: Development of new functions of heterogeneous palladium catalysts
 AUTHOR(S): Sajiki, Hironao
 CORPORATE SOURCE: Gifu Pharmaceutical University, Japan
 SOURCE: Farumashia (2006), 42(2), 140-144
 CODEN: FARUAW; ISSN: 0014-8601
 PUBLISHER: Pharmaceutical Society of Japan
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: Japanese
 AB A review on the development of the Pd/C-ethylenediamine complex catalyst and the Pd-fibroin catalyst, the development of Pd/C-catalyzed deuteration reaction, and Pd/C-catalyzed selective alkylation of amines using nitriles as alkylating agents.
 OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L17 ANSWER 27 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2006:108991 CAPLUS
 DOCUMENT NUMBER: 144:292970
 TITLE: Synthesis of base-selectively deuterium -labeled nucleosides by the Pd/C-catalyzed H-D exchange reaction in deuterium oxide
 AUTHOR(S): Esaki, Hiroyoshi; Aoki, Fumiyo; Maegawa, Tomohiro; Hirota, Kosaku; Sajiki, Hironao
 CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Mitahora-higashi, Gifu, 502-8585, Japan
 SOURCE: Heterocycles (2005), 66, 361-369
 CODEN: HETCYM; ISSN: 0385-5414
 PUBLISHER: Japan Institute of Heterocyclic Chemistry
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 144:292970
 AB The D2 gas-free and base-selective H-D exchange reaction of nucleosides was developed. It discloses a convenient route to the post-synthetic incorporation of deuteriums into the base moiety of nucleic acids with high deuterium efficiency.
 OS.CITING REF COUNT: 18 THERE ARE 18 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)
 REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 28 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2006:11292 CAPLUS
 DOCUMENT NUMBER: 144:108001
 TITLE: Method for deuteration of haloacrylic acid or its salt
 INVENTOR(S): Maesawa, Tsuneaki; Ito, Nobuhiro; Hirota, Kosaku; Sajiki, Hironao
 PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 28 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|----------|
| WO 2006001236 | A1 | 20060105 | WO 2005-JP11228 | 20050620 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AI, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

CA 2572056 A1 20060105 CA 2005-2572056 20050620

EP 1760064 A1 20070307 EP 2005-750962 20050620

R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR

CN 1972890 A 20070530 CN 2005-80020609 20050620

US 20080071107 A1 20080320 US 2006-630075 20061219

KR 2007039529 A 20070412 KR 2007-7000211 20070104

PRIORITY APPLN. INFO.: JP 2004-187152 A 20040625
WO 2005-JP11228 W 20050620

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 144:108001; MARPAT 144:108001

AB The title method is characterized in that a compound represented by general formula [R1R2C:C(X)CO2]nR3 (wherein R1 and R2 each independently represent a light hydrogen atom or a heavy hydrogen atom, and at least one of R1 and R2 represents a light hydrogen atom; R3 represents a light hydrogen atom, a heavy hydrogen atom, an alkali metal atom, or an alkaline earth metal atom; X represents a halogen atom; and n represents 1 or 2) is reacted with a heavy hydrogen source in the presence of a catalyst selected from palladium catalyst, platinum catalyst, rhodium catalyst, ruthenium catalyst, nickel catalyst, and cobalt catalyst which are not subjected to activation treatment. Thus, a mixture of sodium 2-chloroacrylate and unactivated Rh/C in D2O was heated under nitrogen at 160°C for 24 h to give the deuterated product with 95% deuteration rate.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 29 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2005:1262523 CAPLUS

DOCUMENT NUMBER: 144:23540

TITLE: High refractive index deuterated polyimides and derivatives with good transparency, low moisture absorption and optical transmission losses, heat resistance, and adhesion

INVENTOR(S): Muto, Kazushige; Maesawa, Tsuneaki; Ito, Nobuhiro; Watahiki, Tsutomu; Hirota, Kosaku; Sajiki, Hironao

PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 71 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

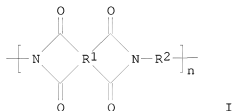
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

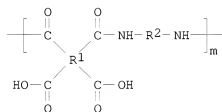
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| WO 2005113646 | A1 | 20051201 | WO 2005-JP8984 | 20050517 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, | | | | |

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ,
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA,
 NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
 SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
 ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
 MR, NE, SN, TD, TG
 CA 2567487 A1 20051201 CA 2005-2567487 20050517
 EP 1754739 A1 20070221 EP 2005-741155 20050517
 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
 IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR
 CN 1957019 A 20070502 CN 2005-80016299 20050517
 JP 4449979 B2 20100414 JP 2006-513695 20050517
 US 20080045724 A1 20080221 US 2006-569463 20061121
 PRIORITY APPLN. INFO.: JP 2004-151209 A 20040521
 WO 2005-JP8984 W 20050517

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
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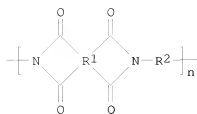


I

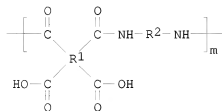


II

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I



II

AB Title polyimides useful as the raw material of polymers for optical waveguides have a deuterated structure I obtained by ring-closure reaction of deuterated polyamic acid II produced by reacting an optionally deuterated acid anhydride with a deuterated diamine, wherein R1 = tetravalent alicyclic or aromatic hydrocarbon group which may be deuterated; and R2 = deuterated divalent aromatic hydrocarbon group; and m, n = ≥ 1 integer. Thus, 20 g o-tolidine and 680 mL D2O were reacted in the presence of 2 g 10% Pd/C and 4 g 5% Pt/C at 80° for 24 h, 10 mmol of which was polymerized with 10 mmol pyromellitic anhydride at 25° for 2 h to give a deuterated polyamic acid with eight average mol. weight 168,000, 10% solution of the resulting copolymer was cast onto a glass, heated at 200° for 1 h and 300° for 1 h to give a deuterated polyimide.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 30 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2005:1184914 CAPLUS

DOCUMENT NUMBER: 144:87749

TITLE: Facile and Efficient Postsynthetic Tritium Labeling Method Catalyzed by Pd/C in HTO

AUTHOR(S): Maegawa, Tomohiro; Hirota, Kosaku; Tatematsu, Kenjiro; Mori, Yukio; Sajiki, Hironao

CORPORATE SOURCE: Laboratory of Medicinal Chemistry and Laboratory of Radiochemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan

SOURCE: Journal of Organic Chemistry (2005), 70(25), 10581-10583

CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:87749

AB A facile and efficient tritium labeling method using a Pd/C-HTO-H2 system is reported. This method can provide multitritium-labeled compds. in highly diluted HTO under T2 gas-free conditions, and is environmentally benign since purification by silica gel column chromatog. is not necessary, which causes a large quantity of radioactive waste such as silica gel and eluent.

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 31 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2005:980492 CAPLUS

DOCUMENT NUMBER: 143:439970

TITLE: Aromatic ring favorable and efficient H-D exchange reaction catalyzed by Pt/C

AUTHOR(S): Sajiki, Hironao; Ito, Nobuhiro; Esaki, Hiroyoshi; Maesawa, Tsuneaki; Maegawa, Tomohiro; Hirota, Kosaku

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan

SOURCE: Tetrahedron Letters (2005), 46(41), 6995-6998

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 143:439970

AB An effective and applicable Pt/C-catalyzed deuteration method of aromatic rings using D₂O as a deuterium source under hydrogen atmospheric was developed. Five percent Pt/C would lead to quite effective H-D exchange results on the aromatic ring systems. The reaction is general for a variety of aromatic compds. including biol. active compds.

OS.CITING REF COUNT: 27 THERE ARE 27 CAPLUS RECORDS THAT CITE THIS RECORD (27 CITINGS)

REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 32 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2005:739644 CAPLUS

TITLE: Facile and efficient isotope labeling method for phenylalanine derivatives catalyzed by Pd/C

AUTHOR(S): Maegawa, Tomohiro; Akashi, Akira; Esaki, Hiroyoshi; Aoki, Fumiyo; Sajiki, Hironao; Hirota, Kosaku; Tatamatsu, Kenjiro; Mori, Yukio

CORPORATE SOURCE: Department of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan

SOURCE: Abstracts of Papers, 230th ACS National Meeting, Washington, DC, United States, Aug. 28-Sept. 1, 2005 (2005), MEDI-130. American Chemical Society: Washington, D. C.

CODEN: 69HFCL

DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)

LANGUAGE: English

AB Amino acids labeled with deuterium or tritium are applied to wide range of studies such as metabolism, structural anal. and dynamics of peptides and proteins. Although a number of methods for the preparation of deuterium-labeled amino acids are reported, appropriately labeled amino acids are still extremely expensive and rarely com. available. Recently, we found that efficient and regioselective deuterium incorporation into the benzylic position of L-phenylalanine derivs. was achieved by thermal control using heterogeneous Pd/C-H₂-D₂O system. And also, further deuterium incorporation at the α -position was observed at higher temperature. We also developed simple and facile tritium labeling methods of phenylalanine derivs. Tritium labeled compds. are used for a tracer to detect a trace amount of wide range of compds. Our Pd/C-H₂-T₂O system is also applicable to a tritium incorporation method to phenylalanine derivs. and the simple and easy workup procedure can provide a safe and environmentally benign tritium labeling method without chromatog. purification

L17 ANSWER 33 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2005:739643 CAPLUS
 TITLE: Efficient deuterium labeling method of biologically active compounds
 AUTHOR(S): Esaki, Hiroyoshi; Aoki, Fumiyo; Maegawa, Tomohiro; Sajiki, Hironao; Hirota, Kosaku
 CORPORATE SOURCE: Department of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan
 SOURCE: Abstracts of Papers, 230th ACS National Meeting, Washington, DC, United States, Aug. 28-Sept. 1, 2005 (2005), MEDI-129. American Chemical Society: Washington, D. C.
 CODEN: 69HFCL
 DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)
 LANGUAGE: English
 AB There is an increasing demand for the synthesis of deuterium-labeled compounds. used in studies a better understanding of the drug metabolism and of higher-order structure of biomols., and so on. While the various procedures toward deuterium-labeled compounds. have been reported, post-synthetic deuterium exchange reaction of the unlabeled compounds. by a catalytic method is prominent for its applicability. We have shown that hydrogen atoms on benzylic carbons are effectively exchange into deuterium atoms using Pd/C in the presence of a catalytic amount of hydrogen gas in D2O at room temperature. Furthermore, the application of heat could promote the catalyst activity of the Pd/C-H2-D2O system and lead to a H-D exchange reaction even on non-activated carbons. Multi-deuterated products using a wide range of unlabeled starting materials including biol. active compounds. such as pharmaceuticals and nucleosides can be easily prepared by application of these systems.

L17 ANSWER 34 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2005:696848 CAPLUS
 DOCUMENT NUMBER: 143:172769
 TITLE: Method of deuteration of aromatic ring and/or heterocycle compounds using mixed metal catalyst
 INVENTOR(S): Ito, Nobuhiro; Maesawa, Tsuneaki; Muto, Kazushige; Hirota, Kosaku; Sajiki, Hironao
 PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 55 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2005070853 | A1 | 20050804 | WO 2004-JP19049 | 20041221 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| CA 2553376 | A1 | 20050804 | CA 2004-2553376 | 20041221 |
| EP 1707548 | A1 | 20061004 | EP 2004-807406 | 20041221 |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS
 CN 1906143 A 20070131 CN 2004-80040874 20041221
 US 20080234488 A1 20080925 US 2006-585629 20060711
 KR 2006129284 A 20061215 KR 2006-7014741 20060721
 PRIORITY APPLN. INFO.: JP 2004-16075 A 20040123
 WO 2004-JP19049 W 20041221

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A method of deuteration in which a compound with aromatic ring and/or heterocycle having an enhanced deuteration ratio can be obtained. There is provided a method of deuteration of a compound with aromatic ring and/or heterocycle, characterized in that a compound with aromatic ring and/or heterocycle is reacted with a deuterium source in the presence of an activated mixed catalyst composed of at least two members selected from among a palladium catalyst, a platinum catalyst, a rhodium catalyst, an iridium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst. Thus, 500 mg nicotinic acid, 50 mg Pd/C (5 mg Pd), and 100 mg Pt/C (5 mg Pt) were suspended in 17 mL D2O, sealed, purged with H₂, and heated at 180° for .apprx.24 h to give deuterated nicotinic acid with 99% deuteration at 2, 5, and 6 positions and 48% deuteration at 4 position vs. 98% deuteration at 2 and 5 positions, 99% deuteration at 6 position, and 10% deuteration at 4 position when Pd/C was used alone.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 35 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2005:517945 CAPLUS
 DOCUMENT NUMBER: 143:173073
 TITLE: Palladium-catalyzed base-selective H-D exchange reaction of nucleosides in deuterium oxide
 AUTHOR(S): Sajiki, Hironao; Esaki, Hiroyoshi; Aoki, Fumiyo; Maegawa, Tomohiro; Hirota, Kosaku
 CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan
 SOURCE: Synlett (2005), (9), 1385-1388
 CODEN: SYNLES; ISSN: 0936-5214
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 143:173073

AB We have developed an efficient and extensive deuterium incorporation method using a heterogeneous Pd/C-D2O-H₂ system into the base moiety of nucleosides. The results presented here provide a deuterium gas-free, totally catalytic, and post-synthetic deuterium labeling method in D2O media.

OS.CITING REF COUNT: 25 THERE ARE 25 CAPLUS RECORDS THAT CITE THIS RECORD (25 CITINGS)
 REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 36 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2005:308293 CAPLUS
 DOCUMENT NUMBER: 143:7955
 TITLE: Efficient and selective deuteration of phenylalanine derivatives catalyzed by Pd/C
 AUTHOR(S): Maegawa, Tomohiro; Akashi, Akira; Esaki, Hiroyoshi; Aoki, Fumiyo; Sajiki, Hironao; Hirota, Kosaku

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan
 SOURCE: Synlett (2005), (5), 845-847
 CODEN: SYNLES; ISSN: 0936-5214
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 143:7955
 AB A facile and efficient deuteration method of phenylalanine derivs. using a Pd/C-H₂-D₂O system has been developed. Selective deuteration at the β -position of phenylalanine derivs. occurred using Pd/C as a catalyst with high deuterium efficiency without racemization at 110 °C. Also, the α -position was deuterated at higher temperature
 OS.CITING REF COUNT: 27 THERE ARE 27 CAPLUS RECORDS THAT CITE THIS RECORD (28 CITINGS)
 REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 37 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2004:711257 CAPLUS
 DOCUMENT NUMBER: 141:379678
 TITLE: Complete Replacement of H₂ by D₂ via Pd/C-Catalyzed H/D Exchange Reaction
 AUTHOR(S): Sajiki, Hironao; Kurita, Takanori; Esaki, Hiroyoshi; Aoki, Fumiyo; Maegawa, Tomohiro; Hirota, Kosaku
 CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan
 SOURCE: Organic Letters (2004), 6(20), 3521-3523
 CODEN: ORLEF7; ISSN: 1523-7060
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 141:379678
 AB A general and in situ D₂ gas generation method using 10% Pd/C-catalyzed H₂-D₂ exchange reaction in a H₂-D₂O system has been developed. H₂ gas sealed in a reaction flask was efficiently converted into nearly pure D₂ gas, which can be used for the reductive deuteration of substrates possessing reducible functionalities within the mol.
 OS.CITING REF COUNT: 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (11 CITINGS)
 REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 38 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2004:589514 CAPLUS
 DOCUMENT NUMBER: 141:139883
 TITLE: Method of catalytic deuteration of carbonyl compounds or secondary alcohols by heavy water
 INVENTOR(S): Ito, Nobuhiro; Maesawa, Tsuneaki; Muto, Kazushige; Hirota, Kosaku; Sajiki, Hironao
 PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 42 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
| ----- | ---- | ---- | ----- | ---- |

WO 2004060831 A1 20040722 WO 2003-JP14182 20031107

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2511885 A1 20040722 CA 2003-2511885 20031107
AU 2003277596 A1 20040729 AU 2003-277596 20031107
EP 1577280 A1 20050921 EP 2003-814536 20031107

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN 1732135 A 20060208 CN 2003-80107483 20031107
CN 100384792 C 20080430
JP 4396522 B2 20100113 JP 2004-564469 20031107
US 20060116535 A1 20060601 US 2005-539188 20050616
IN 2005KN01449 A 20070720 IN 2005-KN1449 20050726
JP 2002-378932 A 20021227
WO 2003-JP14182 W 20031107

PRIORITY APPLN. INFO.:

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 141:139883; MARPAT 141:139883

AB Described is a method of deuterating a carbonyl or secondary alc. compound represented by the general formula R1-X-R2 (I) (wherein R1 = alkyl optionally possessing a CH:CH or C.tplbond.C bond, aralkyl ; R2 = alkyl optionally possessing a CH:CH or C.tplbond.C bond, aryl, aralkyl, alkoxy, aryloxy, hydroxy; X carbonyl, hydroxymethylene), which comprises reacting the compound represented by the general formula I with a deuterium source, in particular D2O, in the presence of a catalyst selected among activated palladium, platinum, rhodium, ruthenium, nickel, and cobalt catalysts. By the method, deuteration, which has been conducted under severe conditions, can be conducted under neutral conditions. Even when the compound contains an unsatd. bond, it can be deuterated without reducing the unsatd. bond. Not only hydrogens near the carbonyl or hydroxymethylene group but also those remotely situated from these groups are selectively deuterated without deuterating the carbon-carbon double or triple bonds. Thus, 500 mg tricyclo[5.2.1.02'6]decan-8-ol and 100 mg Pd-C were suspended in 17 mL D2O, purged with H, and heated at 180° for 24 h in an oil bath to give tricyclo[5.2.1.02'6]decan-8-ol deuterated by 96% at 8-position and 88% at other positions.

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (11 CITINGS)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 39 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2004:453150 CAPLUS

DOCUMENT NUMBER: 141:23545

TITLE: Method for deuteration or tritiation of heterocyclic compounds

INVENTOR(S): Ito, Nobuhiro; Maesawa, Tsuneaki; Muto, Kazushige; Hirota, Kosaku; Sajiki, Hironao

PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|------------|
| WO 2004046066 | A1 | 20040603 | WO 2003-JP14181 | 20031107 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| CA 2506010 | A1 | 20040603 | CA 2003-2506010 | 20031107 |
| AU 2003277595 | A1 | 20040615 | AU 2003-277595 | 20031107 |
| EP 1561741 | A1 | 20050810 | EP 2003-811499 | 20031107 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| CN 1714060 | A | 20051228 | CN 2003-80103924 | 20031107 |
| JP 4525349 | B2 | 20100818 | JP 2004-553148 | 20031107 |
| US 20060025596 | A1 | 20060202 | US 2005-534344 | 20050509 |
| US 7517990 | B2 | 20090414 | | |
| IN 2005KN01145 | A | 20061110 | IN 2005-KN1145 | 20050615 |
| PRIORITY APPLN. INFO.: | | | JP 2002-331594 | A 20021115 |
| | | | WO 2003-JP14181 | W 20031107 |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A method for deuteration or tritiation of a heterocyclic ring comprises allowing a heterocyclic compound to be present under a sealing and refluxing condition in a deuterated or tritiated solvent (e.g., D2O) in the presence of an activated catalyst selected from among a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst. The method allows a deuteration or tritiation temperature to be kept at a temperature higher than the boiling temperature of the solvent, which results in the replacement of a hydrogen atom in a heterocyclic ring of a heterocyclic compound with very good efficiency. Further, the method can be widely used for the deuteration or tritiation of various types of heterocyclic compds. in a com. process.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 40 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2004:239925 CAPLUS

DOCUMENT NUMBER: 140:406428

TITLE: Efficient C-H/C-D Exchange Reaction on the Alkyl Side Chain of Aromatic Compounds Using Heterogeneous Pd/C in D2O

AUTHOR(S): Sajiki, Hironao; Aoki, Fumiyo; Esaki, Hiroyoshi; Maegawa, Tomohiro; Hirota, Kosaku

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan

SOURCE: Organic Letters (2004), 6(9), 1485-1487
CODEN: ORLEF7; ISSN: 1523-7060

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 140:406428

AB An efficient and extensive deuterium incorporation using

heterogeneous Pd/C-D2O-H2 system into many different types of unactivated C-H bond positions was developed. The present method provides a deuterium gas-free, totally catalytic, and post-synthetic deuterium labeling method in D2O media.

OS.CITING REF COUNT: 40 THERE ARE 40 CAPLUS RECORDS THAT CITE THIS RECORD (40 CITINGS)
 REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 41 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2004:101109 CAPLUS
 DOCUMENT NUMBER: 140:163571
 TITLE: Process for preparation of deuterated aromatic compounds
 INVENTOR(S): Ito, Nobuhiro; Maesawa, Tsuneaki; Muto, Kazushige; Hirota, Kosaku; Sajiki, Hironao
 PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 43 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| WO 2004011400 | A1 | 20040205 | WO 2003-JP8783 | 20030710 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| CA 2493773 | A1 | 20040205 | CA 2003-2493773 | 20030710 |
| AU 2003248267 | A1 | 20040216 | AU 2003-248267 | 20030710 |
| EP 1535889 | A1 | 20050601 | EP 2003-771263 | 20030710 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| CN 1675145 | A | 20050928 | CN 2003-818820 | 20030710 |
| CN 1296331 | C | 20070124 | | |
| JP 4475119 | B2 | 20100609 | JP 2004-524108 | 20030710 |
| US 20070255076 | A1 | 20071101 | US 2007-521531 | 20070222 |
| PRIORITY APPLN. INFO.: | | | JP 2002-219005 | A 20020726 |
| | | | WO 2003-JP8783 | W 20030710 |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
 AB This invention pertains to a method for deuterating a compound having an aromatic ring in the presence of an activated catalyst. For example, phenol was treated with D2O in the presence of Pt/C to give C6D5OH in 98% deuterating rate. This invention provides a method to make deuterated aromatic compds. in mild conditions.
 OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
 REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 42 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2003:991461 CAPLUS
 DOCUMENT NUMBER: 140:41620

TITLE: Process for deuteration of inert methylene
 INVENTOR(S): Hirota, Kosaku; Sajiki, Hironao
 PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 27 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----------------|------|----------|-----------------|----------|
| WO 2003104166 | A1 | 20031218 | WO 2002-JP11785 | 20021112 |
| W: JP, US | | | | |
| JP 4239972 | B2 | 20090318 | JP 2004-511236 | 20021112 |
| US 20050177015 | A1 | 20050811 | US 2004-516638 | 20041202 |
| US 7126023 | B2 | 20061024 | | |

PRIORITY APPLN. INFO.: JP 2002-166224 A 20020606
 WO 2002-JP11785 W 20021112

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 140:41620

AB The invention relates to a process for deuteration of inert alkanes with activated palladium-carbon, specifically, a process for deuteration of a compound having either a Me group or an alkylene group having two or more carbon atoms in a state directly bonded to an optionally substituted aromatic ring through replacement of one or more hydrogen atoms of the Me group or one or more of the benzylic and other hydrogen atoms of the alkylene group by deuterium, characterized in that the above compound is subjected to refluxing in a closed system in the presence of activated palladium-carbon in a state dissolved in a deuterated solvent.

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 43 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2003:677627 CAPLUS

DOCUMENT NUMBER: 140:321640

TITLE: Palladium-catalyzed H-D exchange into nucleic acids in deuterium oxide

AUTHOR(S): Sajiki, Hironao; Aoki, Fumiyo; Esaki, Hiroyoshi; Maegawa, Tomohiro; Hirota, Kosaku

CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Gifu, 502-8585, Japan

SOURCE: Nucleic Acids Research Supplement (2003), 3(3rd International Symposium on Nucleic Acids Chemistry [and] 30th Symposium on Nucleic Acids Chemistry in Japan, 2003), 55-56

CODEN: NARSCE

PUBLISHER: Oxford University Press

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 140:321640

AB We have developed an efficient and extensive deuterium incorporation method using a heterogeneous Pd/C-D2O-H2 system into the base moiety of nucleic acids. The results presented here provide a deuterium gas-free, totally catalytic and post-synthetic deuterium labeling method in D2O media.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 44 OF 44 CAPLUS COPYRIGHT 2011 ACS on STN
 ACCESSION NUMBER: 2002:526646 CAPLUS
 DOCUMENT NUMBER: 137:384626
 TITLE: Pd/C-H2-catalyzed deuterium exchange
 reaction of the benzylic site in D2O
 AUTHOR(S): Sajiki, Hironao; Hattori, Kazuyuki; Aoki,
 Fumiyo; Yasunaga, Kanoko; Hirota, Kosaku
 CORPORATE SOURCE: Laboratory of Medicinal Chemistry, Gifu Pharmaceutical
 University, Gifu, 502-8585, Japan
 SOURCE: Synlett (2002), (7), 1149-1151
 CODEN: SYNLES; ISSN: 0936-5214
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 137:384626
 AB Pd/C is found to catalyze efficient and chemoselective exchange of
 deuterium derived from D2O with hydrogens on a benzylic carbon in
 the presence of a catalytic amount of hydrogen at room temperature
 OS.CITING REF COUNT: 33 THERE ARE 33 CAPLUS RECORDS THAT CITE THIS
 RECORD (33 CITINGS)
 REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> logoff hold

(FILE 'HOME' ENTERED AT 17:03:58 ON 07 JAN 2011)

FILE 'REGISTRY' ENTERED AT 17:04:15 ON 07 JAN 2011

L1 STRUCTURE UPLOADED
 D
 L2 50 SEA FILE=REGISTRY SSS SAM L1
 L3 STRUCTURE UPLOADED
 D
 L4 2 SEA FILE=REGISTRY SSS SAM L3
 D SCAN
 L5 55 SEA FILE=REGISTRY SSS FUL L3
 D L5 1-55
 E (PALLADIUM AND CARBON)/CN
 E (PALLADIUM AND CHARCOAL)/CN
 E (PALLADIUM CHARCOAL)/CN

FILE 'CAPLUS' ENTERED AT 17:22:30 ON 07 JAN 2011

E US20060116535/PN
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 SEL RN
 L7 995744 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON (7440-16-6/BI OR
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 OR 7440-05-3/BI OR 7440-06-4/BI OR 7440-18-8/BI OR 79-31-2/BI
 OR 106-35-4/BI OR 108-94-1/BI OR 110-43-0/BI OR 123-19-3/BI OR
 127-09-3/BI OR 13380-94-4/BI OR 14044-94-1/BI OR 18153-61-2/BI
 OR 21273-02-9/BI OR 3385-61-3/BI OR 350820-09-6/BI OR 497-38-1/
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 OR 666-52-4/BI OR 67-64-1/BI OR 725242-18-2/BI OR 725242-19-3/BI
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 OR 78-93-3/BI OR 79-41-4/BI OR 91468-78-9/BI)

FILE 'REGISTRY' ENTERED AT 17:22:56 ON 07 JAN 2011

L8 49 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (7440-16-6/BI OR
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OR 7440-05-3/BI OR 7440-06-4/BI OR 7440-18-8/BI OR 79-31-2/BI
OR 106-35-4/BI OR 108-94-1/BI OR 110-43-0/BI OR 123-19-3/BI OR
127-09-3/BI OR 13380-94-4/BI OR 14044-94-1/BI OR 18153-61-2/BI
OR 21273-02-9/BI OR 3385-61-3/BI OR 350820-09-6/BI OR 497-38-1/
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725242-32-0/BI OR 7440-02-0/BI OR 7440-48-4/BI OR 7789-20-0/BI
OR 78-93-3/BI OR 79-41-4/BI OR 91468-78-9/BI)

FILE 'CAPLUS' ENTERED AT 17:23:05 ON 07 JAN 2011

L9 1 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON L6 AND L8
D L9 IBIB GI ABS HITSTR

FILE 'REGISTRY' ENTERED AT 17:23:47 ON 07 JAN 2011

D L8 1-49
E 21273-02-9/RN

L10 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 21273-02-9/RN

FILE 'CAPLUS' ENTERED AT 17:26:14 ON 07 JAN 2011

L11 34 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON L10
D L11 IBIB GI ABS HITSTR 1-34

FILE 'CAPLUS' ENTERED AT 18:36:29 ON 07 JAN 2011

L12 148 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON L5

FILE 'REGISTRY' ENTERED AT 18:38:34 ON 07 JAN 2011

E 42913-50-8/RN

L13 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 42913-50-8/RN

FILE 'CAPLUS' ENTERED AT 18:38:42 ON 07 JAN 2011

L14 1 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON L13

D L14 IBIB GI ABS HITSTR

L15 1 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON HIRONAO S?/AU

D L15 IBIB

D L6 IBIB GI ABS

L16 233 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON SAJIKI H?/AU

L17 44 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON L16 AND (DEUTERIUM OR
DEUTERAT?)

D L17 IBIB GI ABS 1-44

COST IN U.S. DOLLARS

SINCE FILE TOTAL

FULL ESTIMATED COST

ENTRY SESSION
164.39 920.00

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE TOTAL

CA SUBSCRIBER PRICE

ENTRY SESSION
-40.02 -70.47

SESSION WILL BE HELD FOR 120 MINUTES

STN INTERNATIONAL SESSION SUSPENDED AT 19:30:31 ON 07 JAN 2011